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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,565	05/12/2006	Neil Griffin	IP21L9.001 APC	5508

20995 7590 10/02/2008  
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EXAMINER
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PHAM, HAI CHI

ART UNIT	PAPER NUMBER
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2861

NOTIFICATION DATE	DELIVERY MODE
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10/02/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com  
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<b>Office Action Summary</b>	<b>Application No.</b> 10/579,565	<b>Applicant(s)</b> GRIFFIN ET AL.	
	<b>Examiner</b> Hai C. Pham	<b>Art Unit</b> 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/12/06</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 16, 23, 24 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Figov et al. (US 6,989,854).

Regarding claim 16, 30: Figov et al. discloses a laser marking system configured to mark a substrate comprising at least one of paper, synthetic paper and resin film

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(printing plate 25 having an oleophilic substrate made of polyester), the substrate being sufficiently sensitive to emitted light that, when exposed, a reaction occurs at at least one point, the reaction marking the substrate, the system comprising a laser light emitting source (semiconductor laser array 32A-32E), means for transmitting light, i.e. fiber optics 33A-33E and lens assembly 35, from said laser light emitting source to said at least one point on the substrate 25, and means for displacing said substrate 25 relative to said laser light emitting source 32 (the printing plate 25 is loaded on the rotating drum 24 that moves the printing member 25 relative to the laser array 32A-32E), wherein said laser light emitting source comprises an array of lasers 32A-32E arranged for simultaneous multi-point marking 39A'-39E', and said array lasers comprise semi-conductor laser diodes configured to emit light in at least one of the infra red (IR laser diodes array 32A-32E), whereby the substrate, being sufficiently sensitive to the at least one of infra red and near infra red radiation, is marked (Fig. 3) (col. 7, line 33 to col. 8, line 24).

Regarding claim 23: Figov et al. further teaches at least one optical element, i.e. lens assembly 35 being located between said lasers 32A-32E and said substrate 25 (Fig. 3).

Regarding claim 24: Figov still further teaches at least one optical element incorporates at least one of a single bulk lens, i.e. single telecentric lens assembly 35 (Fig. 3) (col. 7, lines 42-49).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 16, 17, 19-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manley et al. (EP 0818308) in view of Sasaki (US 6,670,978).

Regarding claim 16, 30: Manley et al., an acknowledged prior art, discloses a laser marking system configured to mark a substrate comprising at least one of paper, synthetic paper and resin film (printing plate 4 having a layer sensitive to the laser irradiation), the substrate being sufficiently sensitive to emitted light that, when exposed, a reaction occurs at at least one point, the reaction marking the substrate, the system comprising a laser light emitting source (semiconductor lasers 8 having at least 64 light emitting elements), means for transmitting light, i.e. optics 10, from said laser light emitting source to said at least one point on the substrate 4, and means for displacing said substrate 4 relative to said laser light emitting source 8 (the printing plate 4 is loaded onto the rotating drum 1, which moves the printing plate 4 relative to the laser array 8), wherein said laser light emitting source comprises an array of lasers 8 arranged for simultaneous multi-point marking (p. 3, lines 30-31), whereby the substrate, being sufficiently sensitive to the laser radiation, is marked (Fig. 1) (col. 7, line 33 to col. 8, line 24).

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Manley et al. fails to teach the laser array emitting laser beam in the infra red or near infra red region.

However, it is old and well known in the art to use suitable laser light source emitting laser beam that is sensitive to the exposed medium as evidenced by Figov et al. where an infra red laser diode array is used to expose the printing plate 25 having a layer that absorbs light in the same spectrum region.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Manley et al. with the teaching of Figov et al. by incorporating infra red laser array for exposing the printing plate since the sensitivity of both the recording medium and the radiation source should be compatible for obtaining an optimum result.

Manley et al. further teaches:

- Regarding claim 17: a heater, i.e. laser 12, primarily configured to heat said substrate prior to exposing said substrate to the laser light (the laser 12 impinges the medium 4 before the beams from the lasers 8), whereby the energy required to be supplied by said array of lasers for marking said substrate is reduced (p. 3, lines 49-52) (p. 4, lines 1-3).
- Regarding claim 19: the heater comprises a light emitter (laser 12).
- Regarding claim 20: another light emitter, i.e. laser 12, positioned adjacent to said laser array 8 and adapted to supply sufficient light so as to bring said substrate close to the marking threshold, wherein while said array of lasers

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emits light, the substrate passes the marking threshold due to the combined effect of said laser array and said other light emitter (Fig. 2).

- Regarding claim 21: said light emitter 12 emits light to said substrate 4 at a point substantially coincident with the point of laser radiation (p. 3, lines 45-46).
- Regarding claim 22: means for varying the energy supplied to each point of said substrate by varying over time at least one of the pulse and amplitude of the transmitted light, whereby variation in mark pigmentation may be achieved (the modulator 9 can be an amplitude modulator) (p. 3, lines 32-35).
- Regarding claim 23: at least one optical element 10 being located between said lasers 8 and said substrate 4 (Fig. 2).
- Regarding claim 24: at least one optical element incorporates at least one of a single bulk lens, i.e. single lens assembly 10 (Fig. 2) (col. 7, lines 42-49).
- Regarding claim 25: a plurality of radiation outputs, plural laser beams emitted from the laser array 8, and means for switching the path of radiation to selected outputs, i.e. the modulator 9 is an acousto-optic modulator, which diffracts the laser beams in different path of radiation of zero or first order diffracted beams that can be selectively chosen (p. 3, lines 23-26).
- Regarding claim 26: means for directing the radiation in a plurality of directions, i.e. using either an acousto-optic modulator or an electro-optic modulator 9 (p. 3, lines 23-26 & 34-35).

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- Regarding claims 27 & 28: at least one of a mechanically displaceable optical element (i.e. the optics 9 is mounted on the rail 6 and displaced by the motor 7), an electronically switchable diffractive element (i.e. acousto-optic modulator or electro-optic modulator 9), and a branched wave guide.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Manley et al. in view of Figov et al., as applied to claim 17 above, and further in view of De Bock et al. (US 5,893,018).

Manley et al. in view of Figov et al. discloses all the basic limitations of the claimed invention including the drive electronics (Manley et al. controller 11 and light modulator 9 for driving the laser array 8) but fails to teach the heat exchanger.

De Bock et al. teaches a means for heating the toner image on the transfer member includes a pre-heating roller and a pre-cooler roller, the pre-heating roller and the pre-cooler roller acting as a heat exchanger (col. 13, lines 15-43).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Manley et al. to include the teaching of De Bock et al. by incorporating the heat exchanger in the form of a pre-heating and pre-cooling rollers in order to reduce energy loss as suggested by De Bock et al.



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7. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Manley et al. in view of Figov et al., as applied to claim 16 above, and further in view of Goldberg (US 4,383,261).

Manley et al. in view of Figov et al. discloses all the basic limitations of the claimed invention except for the laser being configured to be pulsed.

Golberg teaches a method for laser recording to record an image on the recording medium using a semiconductor laser array 60 while dynamically pre-heat the moving recording medium by irradiating the recording medium with another laser 67 at the same spot as that of the laser array 60, the laser beams emitted from the laser 60 being modulated into light pulses (Fig. 5).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Manley et al. to include the teaching of Golberg by modulating the laser beam into light pulses such that the beam spot can be controlled to the desired spot and resolution.

#### ***Pertinent Prior Art***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Haas (US 5,389,959), Sasaki (US 6,670,978) teach a method for laser recording of a medium while dynamically pre-heating the medium at the same recording spots or next to the recording spots.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hai C Pham/  
Primary Examiner, Art Unit 2861  
September 26, 2008